

Reactive Capture of Carbon Dioxide, Phase I

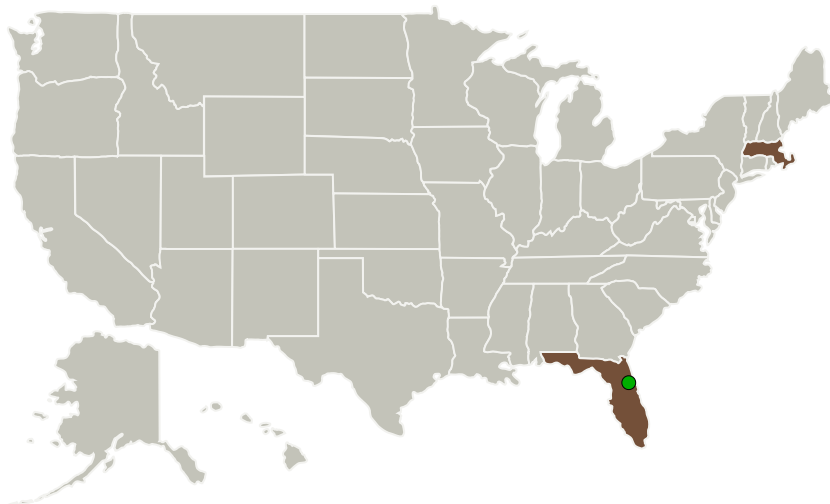
Completed Technology Project (2012 - 2012)




Project Introduction

In this Phase I SBIR, Reactive Innovations, LLC (RIL) proposes to develop a compact and lightweight electrochemical to capture carbon dioxide in the martian atmosphere from nitrogen and argon. Our approach builds on two separately developed technologies in our laboratory involving: 1) carbon dioxide capture and 2) advanced electrode designs. Our approach initially aims to make a compact reactive/separator that can operate continuously with minimum energy requirements for both ISRU process streams in particular the martian atmosphere. The success of this approach demonstrated in a compact and lightweight unit for NASA will allow us to deploy it in the near term for a number of terrestrial-based applications including CO2 sequestration and mitigation.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Reactive Innovations, LLC	Lead Organization	Industry	Westford, Massachusetts
 Kennedy Space Center(KSC)	Supporting Organization	NASA Center	Kennedy Space Center, Florida



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Primary U.S. Work Locations

Florida

Massachusetts

Project Transitions

 **February 2012:** Project Start

 **August 2012:** Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/138448>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Reactive Innovations, LLC

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

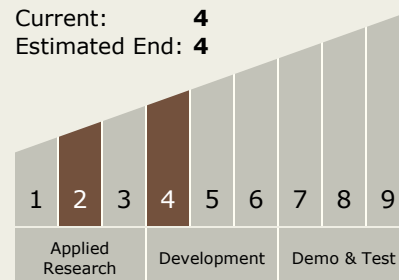
Carlos Torrez

Principal Investigator:

Karen Jayne

Technology Maturity (TRL)

Start: 2
Current: 4
Estimated End: 4



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Technology Areas

Primary:

- TX07 Exploration Destination Systems
 - └ TX07.1 In-Situ Resource Utilization
 - └ TX07.1.2 Resource Acquisition, Isolation, and Preparation

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System